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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,172	06/09/2000	David Wallman	SUN1P270/P4566	3517

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EXAMINER	
SHAH, NILESH R	

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/591,172	WALLMAN, DAVID	
	Examiner	Art Unit	
	Nilesh Shah	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 8-13,17,18,22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cejtin et al (5,745,703) (hereinafter Cejtin).

4. As per claim 1, Cejtin teaches a computing system, the computing system including: a processor; a memory; and a virtual machine (fig 19)which is in communication with the processor (col. 8, lines 11-14), the virtual machine being arranged to enable two or more jobs (col. 18 lines 62-63) which are associated with two or more applications (col. 10, lines 18-20), to run thereon (col. 8, lines 4-6), wherein the virtual machine is arranged to create a heap in the memory (col. 7, lines 65-67) for each one of the two or more jobs that run on the virtual machine (col. 8, lines 16-17; col. 20, lines 37-40, col. 8, lines 4-6; col. 7 lines 63-67).

5. As per claim 2, Cejtin teaches a computing system wherein the virtual machine is scaleable (col. 8, lines 13-15).

6. As per claim 8, Cejtin teaches a computing system wherein the virtual machine is further arranged to enable information to be exchanged between the one or more jobs that are arranged to run on the virtual machine (col. 20, lines 37-40; col. 8, lines 4-6; col. 7, lines 63-67).

7. As per claim 9, Cejtin teaches a computing system the virtual machine is a Java compliant virtual machine (col. 1, lines 55-60).

8. As per claim 10, Cejtin teaches a computing system the virtual machine is associated with a system heap, and the virtual machine is further arranged to create a system garbage collector, the system garbage collector being arranged to perform garbage collection on the system heap (col. 2, lines 60-65; col. 16, lines 50-63).

9. As per claim 11, Cejtin teaches a computing system wherein the virtual machine is further arranged to create an incremental garbage collector for each heap created in the memory, the incremental garbage collector for each heap being arranged to perform garbage collection on its associated heap (col. 2, lines 60-65; col. 16, lines 50-63).

10. As per claim 12, Cejtin teaches a computing system wherein the one or more jobs are arranged to execute substantially concurrently (col. 20, lines 37-40).

11. As per claim 13, Cejtin teaches a virtual machine arranged to operate in cooperation with a computing system, the virtual machine including: a first mechanism for creating a first job and a second job which are respectively associated with a first application and a second application, the first job and the second job being arranged to run with respect to the virtual machine (col. 20, lines 37-40; col. 8, lines 4-6; col. 7, lines 63-67);
the second mechanism being arranged to provide the at least one job with at least one class that is arranged to be shared between the first job and the second job (col. 20, lines 35-39); and
a third mechanism, the third mechanism being arranged to exchange information between the first job and the second job (col. 18, lines 61-67).

12. As per claim 17, Cejtin teaches a virtual machine wherein the second mechanism is further arranged to share the at least one class between the first job and the second job (col. 20, lines 37-40; col. 8, lines 4-6; col. 7, lines 63-67).

13. As per claim 18, Cejtin teaches a virtual machine wherein at least one of the first job and the second job includes data which is persisted (col. 18,lines 61-67).

14. Claim 22 is rejected based on the same rejected as claim 1 above.

15. As per claim 23, Cejtin teaches a computing system the virtual machine is a Java compliant virtual machine (col. 1, lines 55-60).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 3-7,14-16,19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cejtin et al (5,745,703) (hereinafter Cejtin) and further in view of Morse (5,561,786).

18. As per claim 3, Cejtin teaches the invention substantially as claimed including the use of operating parallel jobs on a virtual machine (col. 18 lines 61-67).

19. Cejtin does not specifically teach that the virtual machine includes a jobs manager, a class manager, and a heap manager.

Morse teaches a computing system wherein the virtual machine includes a jobs manager, a class manager, and a heap manager (col. 1, lines 27-32; col. 2, lines 6-14).

20. It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Morse and Cejtin because Morse's use of managers would have

improved the efficiency of Cejtin's system by having a central location for distributing the jobs.

21. As per claim 4, Morse teaches a computing system wherein the heap manager manages substantially all heaps in the memory that are created by the virtual machine (col. 1, lines 27-32; col. 2, lines 6-14).

22. As per claim 5, Morse teaches a computing system wherein the heap manager is arranged to allow an object allocated on a first heap created by the virtual machine to be visible to a second heap created by the virtual machine (col. 2, lines 7-14; col. 5, lines 13-20).

23. As per claim 6, Morse teaches a computing system wherein the heap manager uses an object router to exchange data between the first heap and the second heap (col. 2, lines 7-14; col. 5, lines 13-20).

24. As per claim 7, Cejtin teaches a computing system wherein the class manager is arranged to enable a class associated with the virtual machine to be shared by the one or more jobs that are arranged to run on the virtual machine (col. 20, lines 37-40; col. 8, lines 4-6; col. 7, lines 63-67).

25. As per claim 14, Morse teaches a virtual machine wherein the first mechanism is further arranged to create a first heap associated with the first job and a second heap associated

with the second job, and the third mechanism is further arranged to increase a size of the first heap and to decrease a size of the second heap (col. 7, lines 15-19; col. 13, lines 40-50).

26. As per claim 15, Morse teaches a virtual machine further including a first garbage collector and a second garbage collector, wherein the first garbage collector is arranged to perform a garbage collection on the first heap and the second garbage collector is arranged to perform a garbage collection on the second heap (col. 7, lines 15-19; col. 13, lines 40-50).

27. As per claim 16, Morse teaches a virtual machine wherein the size of the first heap and the size of the second heap may be dynamically altered (col. 13 lines 40-50).

28. As per claim 19 Cejtin teaches a computer-implemented method for executing a first application substantially concurrently with a second application on a virtual machine, the computer-implemented method comprising:

creating a first job on a virtual machine, the first job being associated with the first application, creating a second job on the virtual machine, the second job being associated with the second application (col. 18, lines 61-67).

Morse teaches creating a first heap, the first heap being associated with the first job; and creating a second heap, the second heap being associated with the second job (col. 7, lines 15-19; col. 13, lines 40-50).

29. As per claim 20, Cejtin teaches a computer-implemented method wherein the first job and the second job share at least one class (col. 20, lines 37-40; col. 8, lines 4-6; col. 7, lines 63-67).

30. As per claim 21, Cejtin teaches a computer-implemented method wherein the first application and the second application both executed substantially simultaneously (col. 20, lines 37-40).

Conclusion

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh Shah whose telephone number is (571)272-3771. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571)272-3756.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nilesh Shah
Examiner
Art Unit 2127

NS
September 15, 2004

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